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0980 12 040802



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C12N 15/12, C07K 14/47, A61K 38/17		A1	(11) International Publication Number: WO 00/23584																																																									
			(43) International Publication Date: 27 April 2000 (27.04.00)																																																									
(21) International Application Number: PCT/EP99/07832 (22) International Filing Date: 15 October 1999 (15.10.99) (30) Priority Data: 98119583.7 16 October 1998 (16.10.98) EP (71) Applicants (for all designated States except US): BOEHRINGER INGELHEIM INTERNATIONAL GMBH [DE/DE]; Postfach 200, D-55216 Ingelheim am Rhein (DE). UNIVERSITY HOSPITAL LEIDEN [NL/NL]; Rijnsburgerweg 10, NL-2321 RP Leiden (NL). (72) Inventors; and (75) Inventors/Applicants (for US only): SCHRIER, Peter, I. [NL/NL]; Schelpenkade 17, NL-2313 ZT Leiden (NL). AARNOUDSE, Corlien, A. [NL/NL]; Pr. Alexanderlaan 18, NL-2224 XM Katwijk (NL). HEIDER, Karl-Heinz [DE/AT]; Johann-Strauss-Promenade 4/11, A-2000 Stock- erau (AT). KLADE, Christoph [AT/AT]; Gröhrmühlgasse 1b/17, A-2700 Wr. Neustadt (AT). (74) Agents: LAUDIEN, Dieter; Boehringer Ingelheim GmbH, D-55216 Ingelheim am Rhein (DE) et al.		(81) Designated States: CA, JP, MX, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.																																																										
(54) Title: CAMEL, AN ALTERNATIVE TRANSLATION PRODUCT OF THE TUMOUR ANTIGEN LAGE-1																																																												
<table border="0"> <tr> <td>CAMEL</td> <td>-----</td> <td></td> </tr> <tr> <td>LAGE-1^S</td> <td>--ATCCTCGTGGGCCCTGACCTTCTCTCTGAGAGCCGGGCAGAGGCTCCG</td> <td>48</td> </tr> <tr> <td>LAGE-1^L</td> <td>GCATCCTCGTGGGCCCTGACCTTCTCTCTGAGAGCCGGGCAGAGGCTCCG</td> <td>50</td> </tr> <tr> <td>NY-ESO-1</td> <td>--ATCCTCGTGGGCCCTGACCTTCTCTCTGAGAGCCGGGCAGAGGCTCCG</td> <td>48</td> </tr> <tr> <td>CAMEL</td> <td>-----CGACGGGCGATGCT</td> <td>14</td> </tr> <tr> <td>LAGE-1^S</td> <td>GAGCCATGCAGGCCGAAGGCCAGGGGCACAGGGGGTTTCGACGGGCGATGCT</td> <td>98</td> </tr> <tr> <td>LAGE-1^L</td> <td>GAGCCATGCAGGCCGAAGGCCAGGGGCACAGGGGGTTTCGACGGGCGATGCT</td> <td>100</td> </tr> <tr> <td>NY-ESO-1</td> <td>GAGCCATGCAGGCCGAAGGCCAGGGGGTTCGACGGGCGATGCT</td> <td>98</td> </tr> <tr> <td></td> <td>*****</td> <td></td> </tr> <tr> <td>CAMEL</td> <td>GATGGCCCAGGAGGCCCTGGCATTCTGATGGCCCAGGGGGCAATGCTGG</td> <td>64</td> </tr> <tr> <td>LAGE-1^S</td> <td>GATGGCCCAGGAGGCCCTGGCATTCTGATGGCCCAGGGGGCAATGCTGG</td> <td>148</td> </tr> <tr> <td>LAGE-1^L</td> <td>GATGGCCCAGGAGGCCCTGGCATTCTGATGGCCCAGGGGGCAATGCTGG</td> <td>150</td> </tr> <tr> <td>NY-ESO-1</td> <td>GATGGCCCAGGAGGCCCTGGCATTCTGATGGCCCAGGGGGCAATGCTGG</td> <td>148</td> </tr> <tr> <td></td> <td>*****</td> <td></td> </tr> <tr> <td>CAMEL</td> <td>CGGCCCAGGAGAGGCGGGTGCCACGGGCGGCAGAGGTCCCCGGGGCGCAG</td> <td>114</td> </tr> <tr> <td>LAGE-1^S</td> <td>CGGCCCAGGAGAGGCGGGTGCCACGGGCGGCAGAGGTCCCCGGGGCGCAG</td> <td>198</td> </tr> <tr> <td>LAGE-1^L</td> <td>CGGCCCAGGAGAGGCGGGTGCCACGGGCGGCAGAGGTCCCCGGGGCGCAG</td> <td>200</td> </tr> <tr> <td>LAGE-1^L</td> <td>CGGCCCAGGAGAGGCGGGTGCCACGGGCGGCAGAGGTCCCCGGGGCGCAG</td> <td>198</td> </tr> <tr> <td></td> <td>*****</td> <td></td> </tr> </table>				CAMEL	-----		LAGE-1 ^S	--ATCCTCGTGGGCCCTGACCTTCTCTCTGAGAGCCGGGCAGAGGCTCCG	48	LAGE-1 ^L	GCATCCTCGTGGGCCCTGACCTTCTCTCTGAGAGCCGGGCAGAGGCTCCG	50	NY-ESO-1	--ATCCTCGTGGGCCCTGACCTTCTCTCTGAGAGCCGGGCAGAGGCTCCG	48	CAMEL	-----CGACGGGCGATGCT	14	LAGE-1 ^S	GAGCCATGCAGGCCGAAGGCCAGGGGCACAGGGGGTTTCGACGGGCGATGCT	98	LAGE-1 ^L	GAGCCATGCAGGCCGAAGGCCAGGGGCACAGGGGGTTTCGACGGGCGATGCT	100	NY-ESO-1	GAGCCATGCAGGCCGAAGGCCAGGGGGTTCGACGGGCGATGCT	98		*****		CAMEL	GATGGCCCAGGAGGCCCTGGCATTCTGATGGCCCAGGGGGCAATGCTGG	64	LAGE-1 ^S	GATGGCCCAGGAGGCCCTGGCATTCTGATGGCCCAGGGGGCAATGCTGG	148	LAGE-1 ^L	GATGGCCCAGGAGGCCCTGGCATTCTGATGGCCCAGGGGGCAATGCTGG	150	NY-ESO-1	GATGGCCCAGGAGGCCCTGGCATTCTGATGGCCCAGGGGGCAATGCTGG	148		*****		CAMEL	CGGCCCAGGAGAGGCGGGTGCCACGGGCGGCAGAGGTCCCCGGGGCGCAG	114	LAGE-1 ^S	CGGCCCAGGAGAGGCGGGTGCCACGGGCGGCAGAGGTCCCCGGGGCGCAG	198	LAGE-1 ^L	CGGCCCAGGAGAGGCGGGTGCCACGGGCGGCAGAGGTCCCCGGGGCGCAG	200	LAGE-1 ^L	CGGCCCAGGAGAGGCGGGTGCCACGGGCGGCAGAGGTCCCCGGGGCGCAG	198		*****	
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LAGE-1 ^L	GAGCCATGCAGGCCGAAGGCCAGGGGCACAGGGGGTTTCGACGGGCGATGCT	100																																																										
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(57) Abstract																																																												
<p>The tumor-associated antigen CAMEL and DNA encoding it. The tumor-associated antigen is encoded by an open reading frame of the LAGE-1 gene. The tumor-associated antigen, immunogenic (poly)peptides derived therefrom and DNAs encoding them, are useful for cancer immunotherapy.</p>																																																												